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UTILITY PATENT APPLICATION TRANSMITTAL *(Only for new nonprovisional applications under 37 CFR 1 53(b))*		
Attorney Docket No.	06192.0102	
First Named Inventor or Application Identifier		Min-Young HEO, et al.
Title	System And Method For Moving Substrates In And Out Of A Manufacturing Process	
Express Mail Label No.		

APPLICATION ELEMENTS
See MPEP chapter 600 concerning utility patent application contents

ADDRESS TO: Commissioner of Patents and Trademarks
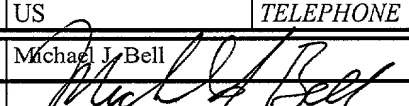Box Patent Application
Washington, DC 20231

1. ☒ *Fee Transmittal Form (Form PTO-1082)
   (Submit an original and a duplicate for fee processing)

2. ☒ Specification [*Total Pages* 14]
   (preferred arrangement set forth below)
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R&D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings (if filed)
   - Detailed Description
   - Claims
   - Abstract of the Disclosure

3. ☒ Drawing(s) *(35 USC 113)* [*Total Sheets* 3]

4. Oath or Declaration [*Total Pages* 4]

   a. ☒ Newly executed (original or copy)

   b. ☐ Copy from a prior application (37 CFR 1.63(d))
      (for continuation/divisional with Box 17 completed)
      [Note Box 5 below]
      i. ☐ DELETION OF INVENTOR(S)
         Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference *(useable if Box 4b is checked)*
   The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. ☐ Microfiche Computer Program *(Appendix)*

7. Nucleotide and/or Amino Acid Sequence Submission
   (if applicable, all necessary)
   a. ☐ Computer Readable Copy
   b. ☐ Paper Copy (identical to computer copy)
   c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. ☒ Assignment Papers (cover sheet & document(s))

9. ☐ 37 CFR 3.73(b) Statement *(when there is an assignee)*   ☒ Power of Attorney

10. ☐ English Translation Document *(if applicable)*

11. ☐ Information Disclosure Statement (IDS)/PTO-1449   ☐ Copies of IDS Citations

12. ☐ Preliminary Amendment

13. ☒ Return Receipt Postcard (MPEP 503) (Two) *(should be specifically itemized)*

14. ☐ *Small Entity Statement(s)   ☐ Statement filed in prior application, Status still proper and desired

15. ☒ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*

16. ☐ Other:

*NOTE FOR ITEMS 1 & 14 IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C F R § 1 27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C F R § 1 28)

17. **If a CONTINUING APPLICATION,** *check appropriate box and supply the requisite information:*
    ☐ Continuation   ☐ Divisional   ☐ Continuation-in-part (CIP)   of prior application No: _____ / _____
    Prior Application Information: Examiner: _____   Group/Art Unit: _____

18. CORRESPONDENCE ADDRESS

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COUNTRY	US	TELEPHONE	202-783-0800	FAX	202-383-7195

Name (Print/Type)	Michael J. Bell	Registration No. (Attorney/Agent)	39,604
Signature	*[signature]*	Date	January 11, 2000

Burden Hour Statement This form is estimated to take 0 2 hours to complete Time will vary depending upon the needs of the individual case Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231 DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS SEND TO Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

FORM PTO-1082

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Box No. 34
1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2402
(202) 783-0800

Attorney Docket No. __06192.0102__

COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of
Inventor(s): **Min-Young HEO; Sung-Joon BYUN; Jung-Teak LIM; and Byung-Kwen PARK**
For: **System And Method For Moving Substrates In And Out Of A Manufacturing Process**

Enclosed are:

_x_	3 sheets of drawings. (Figs. 1-2, 3A, 3B)
_x_	An assignment of the invention to SAMSUNG ELECTRONICS CO., LTD.
_x_	Form PTO-1595.
_x_	A certified copy of KOREAN APPL. NO. 99-4979
___	An associate power of attorney.
___	A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27.
___	Executed Power of Attorney from Assignee.
_x_	Executed Declaration for Patent Application.

The filing fee has been calculated as shown below:

FOR	(Col. 1) NO. FILED	(Col. 2) NO. EXTRA	SMALL ENTITY RATE	SMALL ENTITY FEE	OR	OTHER THAN A SMALL ENTITY RATE	OTHER THAN A SMALL ENTITY FEE
BASIC FEE				$ 345.00	OR		$ 690.00
TOTAL CLAIMS	9 -20 =	* 0	x 9 =		OR	x 18 =	
INDEP. CLAIMS	2 -3 =	* 0	x 39 =		OR	x 78 =	
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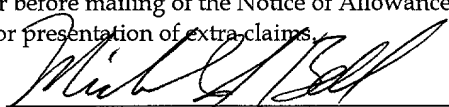   xx Any patent application processing fees under 37 CFR 1.17.

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    ___ Any patent application processing fees under 37 CFR 1.17
    ___ The issue fee set in 37 CFR 1.18 at or before mailing of the Notice of Allowance, pursuant to 37 CFR 1.311(b).
    ___ Any filing fees under 37 CFR 1.16 for presentation of extra claims.

Date __January 11, 2000__

Michael J. Bell (Reg. No. 39,604)

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January 11, 2000

Box Patent Application

BY HAND DELIVERY

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Re: Non-Provisional Utility Patent Application
Application No.: To be Assigned; Filed: January 11, 2000
For: **System And Method For Moving Substrates In And Out Of A Manufacturing Process**
Inventor(s): **Min-Young HEO; Sung-Joon BYUN; Jung-Teak LIM; and Byung-Kwen PARK**
Our Ref: 06192.0102

Sir:

The following documents are forwarded herewith for appropriate action by the U.S. Patent and Trademark Office:

1. Utility Patent Application Transmittal Form;

2. Fee Transmittal Form 1082 (duplicate); and

3. U.S. Utility Patent Application entitled:

   System And Method For Moving Substrates In And Out Of A Manufacturing Process

and naming as inventor(s):

Min-Young HEO; Sung-Joon BYUN; Jung-Teak LIM; and Byung-Kwen PARK

the application consisting of:

a. a specification containing:

   (i)   9 pages of description prior to the claims;
   (ii) 4 pages of claims (9 claims); and
   (iii) a one (1) page abstract;

b. <u>3</u> sheets of drawings: (Figs. 1-2, 3A, 3B);

4. An executed Combined Declaration and Power of Attorney for Patent
    Application;

5. Form PTO-1595 Recordation Cover Sheet and an executed Assignment to
    Samsung Electronics Co., Ltd., recordation of which is hereby respectfully
    requested;

6. Claim for Priority under 35 U.S.C. § 119 in Utility Application (duplicate);

7. Certified copy of Korean Priority Document Patent Appl. No. 99-4979;

8. Our check no. 321628 for $730.00 to cover:

    > $ 690.00 filing fee for patent application;
    >   40.00 assignment recordation fee;

9. Two (2) return postcards.

It is respectfully requested that, of the two attached postcards, one be stamped with
the filing date of these documents and returned to our courier, and the other, prepaid
postcard, be stamped with the filing date and unofficial application number and returned as
soon as possible.

Applicant hereby claims foreign priority benefits under Title 35, United States Code,
§ 119 to Korean Application No. 99-4979 filed February 12, 1999.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee
deficiency, or credit any overpayment, to our Deposit Account No. 08-3038. A duplicate
copy of this letter is enclosed.

Respectfully submitted,

Michael J. Bell
Registration No. 39,604

Enclosures

SYSTEM AND METHOD FOR MOVING SUBSTRATES
IN AND OUT OF A MANUFACTURING PROCESS

BACKGROUND OF THE INVENTION

(a) Field of the Invention

The present invention relates to a system and a method for moving workpieces in and out of a manufacturing process. More specifically, the present invention relates to a system and a method for moving workpieces in and out of a manufacturing process for a semiconductor or a thin film transistor liquid crystal display (TFT-LCD).

(b) Description of the Related Art

Currently, most TFT-LCD manufacturing processes are automated to enhance productivity. Therefore, when processing substrates in a specific process apparatus used for this purpose, a cassette that stores the substrates to be processed is transferred to the process apparatus by an automated guided vehicle (AGV) and is then loaded into the process apparatus. The substrates in the cassette undergo various processes in the process apparatus.

Although the above processes are automated, when a problem occurs in the process apparatus, an operator must be able to check the status of the process apparatus. In this case, the substrates are transferred to the process apparatus in a cassette by a manually guided vehicle (MGV) that the operator manually operates.

Therefore, in the conventional substrate manufacturing process, the way of processing the substrates depends upon which transfer device (AGV or

MGV) is used to transfer the cassette to the process apparatus. That is, when transferring the cassette to the process apparatus using the AGV (hereinafter referred to as an "AGV mode"), job processes on the substrates in each portion of the process apparatus including cassette loading are almost entirely performed automatically. On the other hand, when transferring the cassette to the product process apparatus using the MGV (hereinafter referred to as an "MGV mode"), job processes on the substrate in each process apparatus are manually or automatically performed according to the needs of the operator.

However, in the conventional substrate transfer systems, cassettes can be moved in and out of the process apparatus using only a transfer device that corresponds to the transfer mode set in the manufacturing process apparatus. Using a transfer device that does not correspond to the set transfer mode causes an error.

Therefore, in the conventional substrate transfer systems, the transfer mode set in the process apparatus is checked, and the cassette is then moved using the transfer device corresponding to this transfer mode. This is a cunbersome process resulting in a decrease in overall productivity.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an integrated repair system and its controlling method in which files, having information on defects and how to repair the defects, are merged as a batch at one time, and the merged files are referred to at a final manufacturing step after all inspections

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have been performed.

In order to achieve the object, the present invention provides a system for moving substrates in and out of a manufacturing process that has an automatic transfer device for automatically transferring a cassette that stores substrates, a manual transfer device for transferring the cassette according to instructions of an operator, and a process apparatus for performing predetermined jobs on the substrate stored in the cassette. The process apparatus has a port on which the cassette is temporarily placed by the automatic transfer device or the manual transfer device, a loader having a sensor that can receive a communication start signal from the automatic transfer device when the cassette is transferred by the automatic transfer device, and a job table on which actual jobs are performed on the substrates. When the cassette arrives at the process apparatus, the system checks if it is transferred by the AGV or by the MGV. If transferred by the AGV, the process apparatus automatically gets the cassette and processes the substrate. If transferred by the MGV, the system waits for the operator's instructions and processes the substrates according to the operator's instructions.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate an embodiment of the invention, and, together with the description, serve to explain the principles of the invention:

FIG. 1 is a block diagram of a transfer system according to a preferred

embodiment of the present invention;

FIG. 2 is a detailed diagram of a process apparatus in FIG. 1; and

FIGs. 3 (a) and (b) are flow charts of a transfer method according to a
preferred embodiment of the present invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following detailed description, only the preferred embodiment of
the invention has been shown and described, simply by way of illustrating the
best mode contemplated by the inventors of carrying out the invention. As will
10   be realized, the invention is capable of modification in various obvious respects,
all without departing from the spirit of the invention. Accordingly, the drawings
and description are to be regarded as illustrative in nature, and not restrictive.

FIG. 1 is a diagram of a transfer system according to an embodiment of
the present invention.

15   The transfer system comprises a host 100; an apparatus server 200; a
process apparatus 300; an automated guided vehicle (AGV) 400; an AGV
controller 500; and a manually guided vehicle (MGV) 600.

The host 100, coupled to the apparatus server 200 and the AGV
controller 500 through a network using the transmission control
20   protocol/Internet protocol (TCP/IP), transmits and receives predetermined
messages so as to exchange information or to issue control commands. The
AGV controller 500 receives commands from the host 100 and transmits
specific commands to the AGV 400.

The apparatus server 200 is coupled to the process apparatus 300 using the semiconductor equipment communications standard (SECS), and interfaces the process apparatus 300 and the host 100.

The AGV 400 moves to the process apparatus 300 with a loaded cassette according to the commands of the AGV controller 500. When a job is completed in the process apparatus, it moves automatically with the cassette to another apparatus. After this step, the AGV 400 transmits a completion message to the AGV controller 500. Next, the AGV controller 500 transmits a corresponding message to the host 100 through the network so that the host 100 is able to manage the status of the AGV 400 and the entire transfer system.

The MGV 600 is used when the operator manually transfers cassettes. In the preferred embodiment of the present invention, it is possible to transfer cassettes to the appropriate process apparatus using either AGV 400 or MGV 600 as needed.

FIG. 2 is a detailed diagram of the process apparatus 300 in FIG. 1.

As shown in FIG. 2, the process apparatus 300 comprises a loader 350 on which the cassette transferred by the AGV 400 or MGV 600 is temporarily loaded; a job table 380 on which various processes are performed on the glass substrates in the cassette; and a transfer robot 340 that transfers the glass substrates to the job table 380 from the cassette in the loader 350.

The loader 350 comprises ports 310a and 310b; sensors 320a and 320b used to perform wireless communications with the AGV 400; and bar code card readers (BCR) 330a and 330b which read IDs of the cassettes when

the cassettes are loaded on the port 310a and the port 310b. A glass location

detecting sensor (not shown), located on the port 310a and the port 310b,

detects the position and the number of the glass substrates stored in the

cassettes when the cassettes are on the port 310a and the port 310b. A

verification code reader (VCR) 370, installed on the job table 380, reads IDs of

the glass substrates.

Transfer operations according to an embodiment of the present

invention will now be described referring to FIGs. 3 (a) and (b).

The loader 350 determines whether or not the ports 310a and 310b can

be used (S10). If available, a cassette holding substrates is transferred to the

process apparatus 300 through the AGV 400 or MGV 600 (S20).

In more detail, if the cassette is transferred to the process apparatus

300 by the AGV 400, the process apparatus 300 transmits to the apparatus

server 200 a load request message to load the cassette, after checking the

availability of a port. The apparatus server 200 then transmits this message to

the host 100. When the host 100 receives the message, the host 100 searches

its own database to find the cassette holding the glass substrate to be

processed in the process apparatus 300. The host 100 then calls the AGV

controller 500 to issue a transfer command directing the controller 500 to move

the cassette to the process apparatus 300. The AGV controller 500 then

controls the AGV 400 to load the corresponding cassette to a tester in a stocker

or other process apparatus.

On the other hand, if the cassette is transferred to the process

apparatus 300 through the MGV 600, an operator directly checks the ports

310a and 310b and then transfers the appropriate cassette to the process apparatus 300.

Next, if the cassette is transferred to the process apparatus 300 by the AGV 400, the AGV transmits to the process apparatus 300 a communication start signal (hereinafter referred to as a 'valid on signal') that prompts a loading process, and if the cassette is transferred to the process apparatus 300 by the MGV 600, the cassette is transferred to the process apparatus 300 by the operator's command (S30).

The process apparatus 300 determines whether it has received a valid on signal (S40). If received, the process apparatus 300 checks whether a cassette is on the ports 310a and 310b, and requests to load the cassette (S50). The AGV 400 then loads the cassette on the process apparatus 300 (S60), and the process apparatus 300 checks whether there is a cassette on the ports (S70).

In step S40, if the process apparatus 300 determines that it has not received the valid on signal, the process is skipped to the step S70 because the cassette may be on the ports of the process apparatus, when the cassette is transferred by the MGV, although the valid on signal is not received.

If a cassette is detected on the ports in the step S70, it is again determined whether the valid on signal is detected (S80).

If the valid on signal is detected in the step S80 (indicative of the cassette having been transferred by the AGV), the process apparatus then sets the transfer mode to the AGV mode (i.e., sets an AGV flag) (S90). On the other hand, if the valid on signal is not detected in the step S80 (indicative of the

cassette having been transferred by the MGV), the process apparatus 300 then sets the transfer mode to the MGV mode (i.e., sets an MGV flag) (S100).

If the AGV flag is set in the step S90, the process apparatus 300 automatically chucks the cassette (S110), and then reads the cassette ID with the BCR on the loader 350 (S120). After checking whether there are glass substrates in the cassette and checking the position of the glass substrates via a sensor (not shown) on the ports 310a and 310b (S130), the process apparatus 300 reports information on the cassette to the host 100 (S140).

If the MGV flag is set in the step S100, the cassette is chucked by the instructions of an operator (S150). The reason for manually chucking the cassette is that the cassette is transferred by the MGV 600 only when problems occur in the process apparatus 300 and an operator's attention is necessary.

After manually chucking the cassette, the cassette IDs are read by the BCR on the loader (S160). This step is the same as the AGV mode. Next, it is determined whether glass substrates are in the cassette and the position of the glass substrates is checked (S170). Then, the information on the cassette is reported to the host 100 in step (S180).

In the steps S140 and S180, when the host 100 receives information on the cassette, the host 100 searches its own database referring to the cassette ID, and then transfers information on the glass substrates in the cassette, information on job contents and job processes, and job recipes to the process apparatus 300.

According to the preferred embodiment of the present invention, regardless of whether the cassette is transferred through the AGV mode or

through the MGV mode, the cassette is placed on the ports of the process apparatus. When the cassette is placed on the ports, the process apparatus determines whether this cassette was transferred through the MGV mode or the AGV mode by detecting the valid on signal. Therefore, subsequent jobs are performed according to the corresponding transfer mode. This enhances productivity and efficiency.

While this invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

WHAT IS CLAIMED IS:

1. A system for moving substrates in and out of a manufacturing process, comprising:

an automatic transfer device for automatically transferring a cassette that stores substrates;

a manual transfer device for transferring a cassette that stores substrates according to an instruction of an operator; and

a process apparatus that performs a job on the substrate stored in the cassette,

wherein when the cassette arrives, the process apparatus determines that the cassette has been transferred by the automatic transfer device, or by the manual transfer device.

2. The system of claim 1, wherein said process apparatus comprises:

a port on which the cassette is temporarily placed by the automatic transfer device or the manual transfer device;

a loader that has a sensor to receive a communication start signal transferred from the automatic transfer device when the cassette is transferred by the automatic transfer device; and

a job table where the substrate from the cassette is placed for a job process.

3. The system of claim 2, wherein said loader further comprises a cassette ID reader to read cassette IDs when the cassette is placed on the port.

4. The system of claim 3, wherein the loader automatically chucks the cassette and reads the cassette ID with the cassette ID reader when the

cassette is transferred by the automatic transfer device and

wherein the loader chucks the cassette according to the instructions of the operator and reads the cassette ID with the cassette ID reader when the cassette is transferred by the manual transfer device.

5   5. The system of claim 4, wherein the port has a substrate detecting sensor to detect the number of the substrates stored in the cassette and the position of the slots on which the substrates are stored.

6. The system of claim 4, wherein the process apparatus further comprises a transfer robot that removes the substrates from the cassette on the

10   port and transfers the substrates to the job table.

7. A method for moving substrates in and out of a manufacturing process using a system comprising an automatic transfer device for automatically transferring a cassette that stores substrates, a manual transfer device for transferring the cassette according to an instruction of an operator,

15   and a process apparatus for performing predetermined jobs on the substrate stored in the cassette, the process apparatus including a loader having a port on which cassettes transferred by the automatic transfer device and the manual transfer device are placed, and a job table on which predetermined jobs on the substrate stored in the cassette on the port are performed, comprising the steps

20   of:

(a) transferring the cassette to the process apparatus through the automatic transfer device or the manual transfer device when the port is available;

(b) transmitting a communication start signal to the loader by the

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automatic transfer device when the cassette is transferred to the process apparatus through the automatic transfer device;

(c) loading the cassette to the port from the automatic transfer device;

(d) loading the cassette to the port according to the instruction of the operator when the cassette is transferred to the process apparatus through the manual transfer device in step (a);

(e) determining whether the cassette is detected on the port;

(f) determining whether the communication start signals is detected when the cassette is detected on the port; and

(g) setting the process apparatus in an automatic transfer mode when the communication start signal is detected, and setting the process apparatus in a manual transfer mode when the communication start signal is not detected.

8. The method of claim 7, wherein step (c) comprises the steps of:

determining whether the communication start signal is received;

requesting a cassette loading to the automatic transfer device when the communication start signals is received; and

loading the cassette to the port according to the request.

9. The method of claim 8, wherein the method further comprises the steps of:

(h) automatically chucking the cassette when the process apparatus is set in the automatic transfer mode and chucking the cassette according to the instructions of the operator when the process apparatus is set in the manual transfer mode;

(i) reading the cassette ID of the cassette using the cassette ID reader

on the loader; and

(j) checking a position and a number of the glass substrates in the cassette on the port.

in step (g);

ABSTRACT OF THE DISCLOSURE

Disclosed is a system for moving substrates in and out of a manufacturing process. The present invention comprises an automatic transfer device for automatically transferring a cassette that stores substrates, a manual transfer device for transferring the cassette according to instructions of an operator, and a process apparatus for performing predetermined jobs on the substrate stored in the cassette, wherein the process apparatus comprises: a port on which the cassette is temporarily placed by the automatic transfer device or the manual transfer device; a loader which has a sensor to receive a communication start signal transferred from the automatic transfer device when the cassette is transferred by the automatic transfer device; and a job table on which actual jobs on the substrates, stored in the cassette, are performed, and wherein when the cassette is placed on the port, the process apparatus checks whether the communication start signal is received by the sensor, and when the signal is received, it is determined that the cassette has been transferred by the automatic transfer device, such that the process apparatus is set in an automatic transfer mode, and when the signal is not received, it is determined that the cassette has been transferred by the manual transfer device, and therefore, the process apparatus is set in a manual transfer mode. The present invention improves productivity and efficiency.
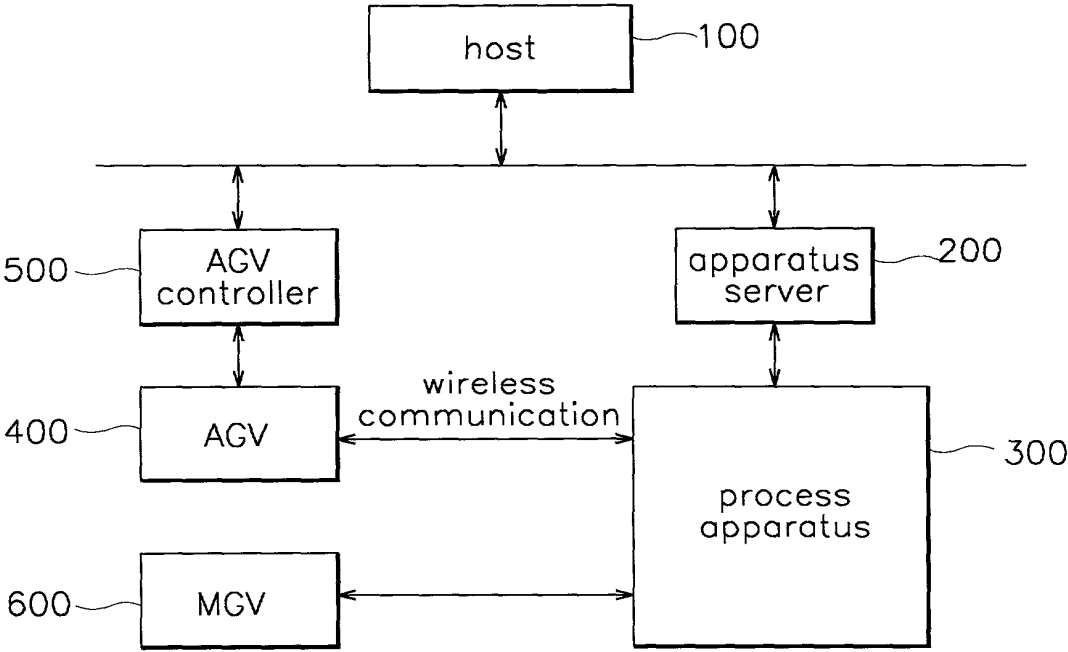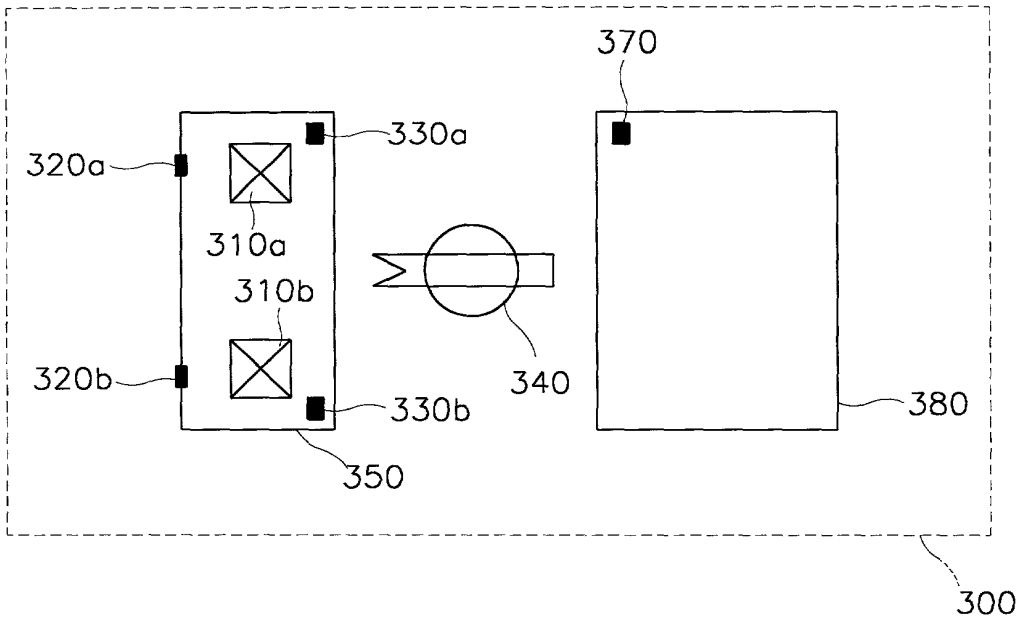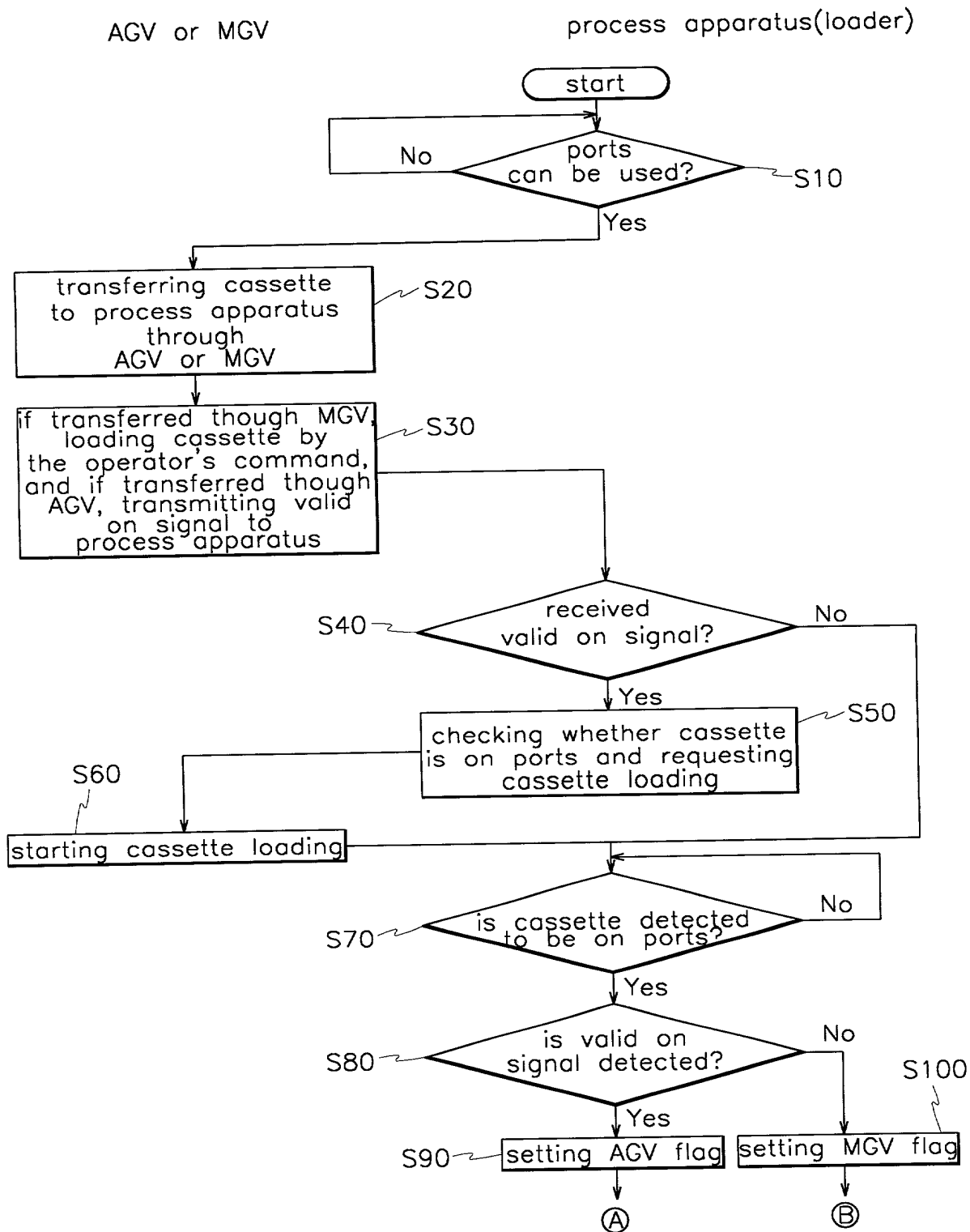
14

FIG.1

host ————— 100

500 ——— AGV controller

apparatus server ——— 200

400 ——— AGV

wireless communication

process apparatus ——— 300

600 ——— MGV

FIG.2

320a

310a

310b

320b

330a

330b

350

370

340

380

300

FIG.3a

AGV or MGV   process apparatus(loader)

```
                          ( start )
                              |
   No   +----< ports can be used? >----S10
    |   |           |
    |   |          Yes
    +---+           |
                    v
        +---------------------------+
        | transferring cassette     |~S20
        | to process apparatus      |
        | through                   |
        | AGV or MGV                |
        +---------------------------+
                    |
        +---------------------------+
        | if transferred though MGV,|~S30
        | loading cassette by       |
        | the operator's command,   |
        | and if transferred though |
        | AGV, transmitting valid   |
        | on signal to              |
        | process apparatus         |
        +---------------------------+
                              |
                              v
   S40 ~< received valid on signal? >---- No
              |                            |
             Yes                           |
              v                            |
        +---------------------------+      |
        | checking whether cassette |~S50  |
        | is on ports and requesting|      |
        | cassette loading          |      |
        +---------------------------+      |
           |                               |
  S60      |                               |
   v       v                               |
+------------------------+                 |
|starting cassette loading|                |
+------------------------+                 |
              |                            |
              v                            v
   S70 ~< is cassette detected >---- No
              to be on ports?            |
              |                          |
             Yes                         |
              v                          |
   S80 ~< is valid on >---- No           |
              signal detected?    |   S100
              |                   v
             Yes         +------------------+
              v          | setting MGV flag |
   S90 ~[ setting AGV flag ]  +------------------+
              |                   |
              v                   v
             (A)                 (B)
```

FIG.3b

Ⓐ   Ⓑ

| automatically chucking the cassette | ~S110 |
| chucking the cassette according to the instructions of operator | ~S150 |

| reading cassette ID | ~S120 |
| reading cassette ID | ~S160 |

| checking whether glass substrate is on the cassette, and the position of the glass substrate | ~S130 |
| checking whether glass substrate is on the cassette, and the position of the glass substrate | ~S170 |

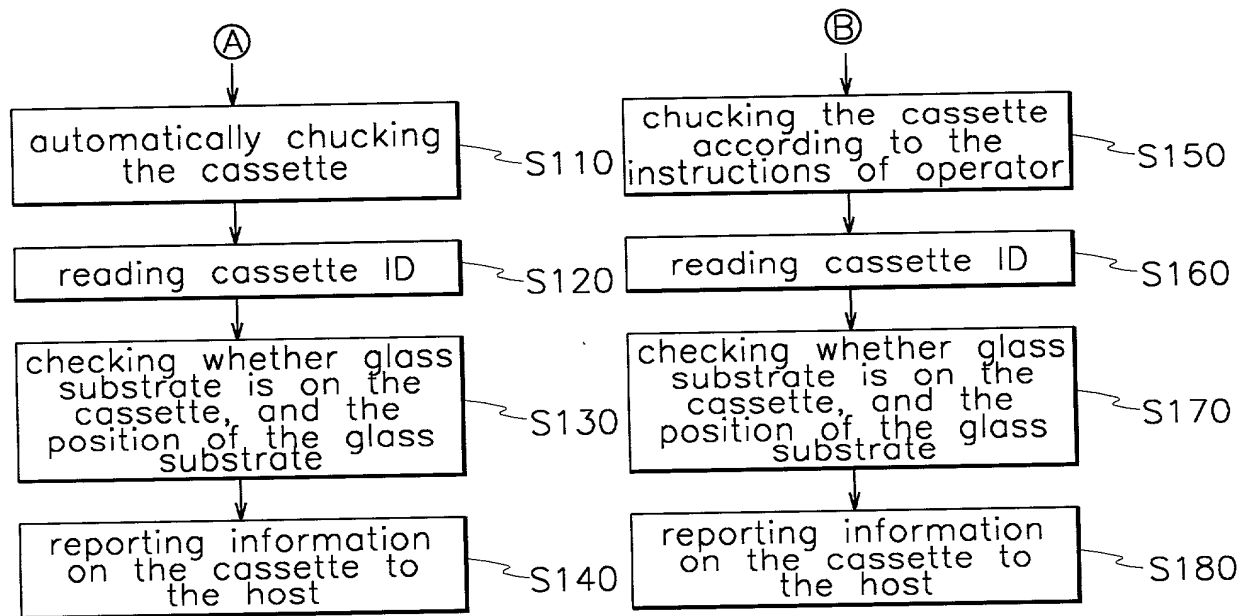| reporting information on the cassette to the host | ~S140 |
| reporting information on the cassette to the host | ~S180 |

Combined Declaration and Power of Attorney for Patent Application

Docket Number:

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed and for which a patent is sought on the invention entitled SYSTEM AND METHOD FOR MOVING SUBSTRATES IN AND OUT OF A MANUFACTURING PROCESS, the specification of which is attached hereto unless the following box is checked:

☐   was filed on _____;
         as United States Application Number or PCT International Application Number _____;
         and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information that is material to patentability as defined in 37 C.F.R. ß 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. ß 119(a)-(d) or ß 365(b) of any foreign application(s) for patent or inventor's certificate, or ß 365(a) of any PCT international application, which designated at least one country other than the United States listed below, and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Claimed
☒ Yes   ☐ No

99-4979	KOREA	12/02/1999
(Application No.)	(Country)	(Day/Month/Year Filed)

☐ Yes   ☐ No

(Application No.)	(Country)	(Day/Month/Year Filed)

I hereby claim the benefit under 35 U.S.C. ß 119(e) of any United States provisional application(s) listed below.

(Application No.)	(Filing Date)

(Application No.)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. ß 120 of any United States application(s), or under ß 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. ß 112, I acknowledge the duty to disclose information that is material to patentability as defined in 37 C.F.R. ß 1.56 that became available between the filing date of the prior application and the national or PCT international filing date of this application.

_____ _____ _____
(Application No.)   (Filing Date)   (Status - patented, pending, abandoned)

_____ _____ _____
(Application No.)   (Filing Date)   (Status - patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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